

CUCET Sample Paper: Chemistry

The statement(s) regarding defects in solids is (are)

- A) Frenkel defect is usually favoured by a very small difference in the size of cation and anion
- B) Trapping of an electron in the lattice leads to the formation of F-centre.
- C) Frenkel defect is a dislocation defect
- D) Schottky defects have no effect on physical properties of solids

2. Of the following, the compound that obeys the octet rule is

- A) CO<sub>2</sub>
- B) BCl<sub>3</sub>
- C) PCl<sub>5</sub>
- D) OsF

3. Using VSEPR theory, the number of lone pairs in PCl<sub>5</sub>, IF<sub>5</sub>, SOF<sub>4</sub> and XeOF<sub>4</sub> are

- A) 0, 1, 0 and 1
- B) 0, 0, 1 and 1
- C) 1, 1, 0 and 0
- D) 1, 0, 1 and 0

4. The first law of thermodynamics is conservation of

- A) momentum
- B) energy
- C) Both a and b
- D) mass

5. The fuel cell reaction generates electricity directly from H<sub>2</sub> and O<sub>2</sub>. The net reaction is  $2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$ . What potential should the battery generate (under standard conditions)?

- A) 0.40
- B) 0.43
- C) 0.68
- D) 1.23

6. Which factors would increase the rate of a chemical reaction?

- A) I. Increasing the temperature.
- B) II. Removing products as they are formed.

- C) III. Adding a catalyst.
- D) I and II II and III ( I,II and III I only)

7. Going down in a group from F to I, which of the following property increases?

- A) ionic radius
- B) electronegativity
- C) ionization energy
- D) oxidizing power

8. Which is best reducing agent?

- A) Li
- B) Na
- C) Rb
- D) Cs

9. Red and white phosphorous will differ but not in

- A) Smell
- B) reaction with  $\text{HNO}_3$
- C) solubility in  $\text{CH}_3$
- D) exhibiting phosphorescence

10. Which of the following bonds has the least energy?

- A) O-O
- B) S-S
- C) Se-Se
- D) Te-Te